GEOL100: INTRODUCTION TO PHYSICAL GEOLOGY

Sections: 0101/0103 **Fall 2011**
J.M. Patterson Building 3201 **MWF 1:00pm-1:50 PM**

Lecturer: Prof. William F McDonough
Office: Chem 0229 **Office Hours:** By appointment
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Text: *Essentials of Geology* by Stephen Marshak, W. W. Norton & Co., New York, 2009 ISBN 0-393-92411-4 *Essentials of Geology* web site: http://www.wwnorton.com/earth/egeo/

Class web site: log into https://umd.blackboard.com/ and click on **GEOL100: Physical Geology**
IMPORTANT NOTES: **NOT** www.smith.umd.edu/blackboard
--Blackboard is best accessed using Microsoft Internet Explorer, versus Netscape, Mozilla (however, I typically use Mozilla), or similar search engines.

Description: A general survey of the rocks and minerals composing the earth, the energy and mineral resources of the planet, its surface features and the agents that form them, and the dynamic forces of plate tectonics. Aspects of global change (including climate) are discussed throughout the semester.

CORE: This class fulfills a CORE Physical Lab Science Course requirement (PL) **ONLY** when taken concurrently with GEOL 110, Physical Geology Laboratory.

Labs: GEOL110 is a separate course, and attendance and grading policies are strictly up to your TA.
Note: Labs begin during the week of September 12th.

Class description and attendance policy: Attendance won't be taken, however lecture attendance is required. Exams will be based on lecture material and reading assignments.

Final grades: Your final letter grade will be based on the following elements:

- **Mandatory mid-term exams**: (50%) Three mid-term exams are administered. The lowest mid-term grade is dropped and the final grade based on the highest scores.
- **Final exam**: (25%) A cumulative paper final exam is given during the final period. The final is closed-book and taken in person in the exam hall.
- **Assignments**: (25%) One quarter of course credit takes the form of weekly electronic quizzes and/or homework assignments distributed via blackboard.

Appeal of grades: You may appeal your grade on any exam prior to the posting of final course grades. **In this as in all college courses, you should retain all graded items until proper grades have been recorded on your transcript.**

Extra credit:

Field Trip: There will be an optional field trip to Great Falls of the Potomac National Park on Saturday, October 24, 2011. To participate, you must reserve a place and pay a small fee (amount to be determined - probably around $15.00). Additional details will be provided. Extra credit with value up to 5% of total semester points can be awarded to participants.

Expectations: GEOL 100 is an introductory course without college prerequisites, however it **is** expected that students will possess the standard knowledge expected of a high school graduate, including proficient comprehension of written and spoken English, basic algebra, physics and

chemistry, and general knowledge of world geography.

Campus Sustainability: The Geology Department along with the University are integrating sustainable practices into their programs. This course, GEOL 100 and its complementary Lab course GEOL 110, specifically identifies and discusses the nature, distribution and availability of natural resources and the environment. **Sustainability Initiatives at UMD:** http://www.sustainability.umd.edu

POLICIES

Absences: Exams are given once. There are no specially scheduled or make-up exams. Absences from exams will not be excused except for those causes approved by University policy (see p. 33-34 of the UMCP Undergraduate Catalog 2006/2007). Only those students excused for these causes will be eligible for a make-up exam. Missed exams must be made up within one week of your return to class. Scheduling issues pertaining to the final must be resolved in advance. If campus is closed due to an emergency or inclement weather on the day of an exam, the exam will be rescheduled. Quizzes and other in-class activities will absolutely not be rescheduled.

Academic Accommodations: If you have a documented disability, you should contact Disability Support Services 0126 Shoemaker Hall. Each semester students with documented disabilities should apply to DSS for accommodation request forms which you can provide to your professors as proof of your eligibility for accommodations. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site.

Religious Observances: The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs, students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the responsibility of the student to inform the instructor of any intended absences for religious observances in advance. Notice should be provided as soon as possible but **no later than the end of the schedule adjustment period**. Faculty should further remind students that prior notification is especially important in connection with final exams, since failure to reschedule a final exam before the conclusion of the final examination period may result in loss of credits during the semester. The problem is especially likely to arise when final exams are scheduled on Saturdays.

Dishonesty: The Student Honor Council observes that, "The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.studenthonorcouncil.umd.edu/whatis.html." Thus, in GEOL100, work submitted under your name must be exclusively your own. Any evidence of dishonesty on any graded assignment will result in a referral to the Office of Student Conduct, whereupon your life will become very interesting, indeed.

Course Evaluations: Your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University as well as to the tenure and promotion process. CourseEvalUM will be open for you to complete your evaluations for fall semester courses between Tuesday, December 1 and Sunday, December 13. You can go directly to the website (www.courseevalum.umd.edu) to complete your evaluations starting December 1. By completing all of your evaluations each semester, you will have the privilege of accessing the summary reports for thousands of courses online at Testudo. This is YOUR chance to anonymously evaluate this class: please use this opportunity!

Lecture, readings and exam schedule: Geology 100: Section: 0101/0103 (Fall 2011)

Date	***Lecture Topics***	**Readings**
8-29	The Earth in context	Chapter 1
8-31	Studying the Earth's interior	Chapter 1
9-2	Plate Tectonics	Chapter 2
9-7	Earth moves under my feet: where, what, why, consequences	Chapter 2
9-9	Minerals: silicates, oxides, carbonates, metals, etc.	Chapter 3
9-12	Minerals: silicates, oxides, carbonates, metals, etc.	Chapter 3
9-14	Rock Groups	Interlude A
9-16	Magmas and Igneous rocks	Chapter 4
9-19	Magmas and Igneous rocks	Chapter 4
9-21	Volcanic Eruptions	Chapter 5
9-23	**EXAM I** (Chapters 1-4 & Interlude A)	
9-26	Volcanic Eruptions	Chapter 5
9-28	A Surface Veneer: Sediments and Soils	Interlude B
9-30	Pages of Earth's past: Sedimentary Rocks	Chapter 6
10-3	Pages of Earth's past: Sedimentary Rocks	Chapter 6
10-5	Metamorphism	Chapter 7
10-7	Metamorphism	Chapter 7
10-10	The Rock Cycle	Interlude C
10-12	A Violent Pulse: Earthquakes	Chapter 8
10-14	A Violent Pulse: Earthquakes	Chapter 8
10-17	Seeing Inside the Earth	Interlude D
10-19	**EXAM II** (Chapters 5-8 & Interlude B-D)	
10-21	Crags, Cracks, and Crumples: Crustal Deformation and Mountain Building	Chapter 9
10-24	Crags, Cracks, and Crumples: Crustal Deformation and Mountain Building	Chapter 9
10-26	Memories of Past Life: Fossils and Evolution	Interlude E
10-28	Deep Time: How Old is Old?	Chapter 10
10-31	Deep Time: How Old is Old?	Chapter 10
11-2	Biography of the Earth's Geology	Chapter 11
11-4	Riches in Rock: Energy and Mineral Resources	Chapter 12
11-7	Riches in Rock: Energy and Mineral Resources	Chapter 12
11-9	An Introduction to Landscape and the Hydrologic Cycle	Interlude F
11-11	Unsafe Ground: Landslides and other Mass Movements	Chapter 13
11-14	Unsafe Ground: Landslides and other Mass Movements	Chapter 13
11-16	**EXAM III** (focusing on chapters 9-13)	

11-18	Running Water: The geology of Streams and Floods	Chapter 14
11-21	Running Water: The geology of Streams and Floods	Chapter 14
11-23	Restless Realms: Oceans and Coasts	Chapter 15
11-25	*** Thanksgiving holiday ********	
11-28	Restless Realms: Oceans and Coasts	Chapter 15
11-30	A Hidden Reserve: Groundwater	Chapter 16
12-2	Dry Regions: Geology of Deserts	Chapter 17
12-5	Amazing Ice: Glaciers and Ice Ages	Chapter 18
12-7	Amazing Ice: Glaciers and Ice Ages	Chapter 18
12-9	Global changes in the Earth System	Chapter 19
12-13	**FINAL EXAM – TUESDAY -- (focusing on chapters 14-19)**	**1:30pm-3:30pm**

Essentials of Geology

By Stephen Marshak, W. W. Norton & Co., New York, 2009 (ISBN 978-0393932386)

	Chapter titles
Chapter 1	The Earth in context
Chapter 2	The Way the Earth works: plate tectonics
Chapter 3	Patterns in Nature: Minerals
Chapter 4	Up from the inferno: Magma and Igneous rocks
Chapter 5	The Wrath of Vulcan: volcanic eruptions
Chapter 6	Pages of Earth's Past: Sedimentary Rocks
Chapter 7	Metamorphism: A process of Change
Chapter 8	A Violent Pulse: Earthquakes
Chapter 9	Crags, Cracks, and Crumples: Crustal deformation and mountain building
Chapter 10	Deep time: How Old is Old?
Chapter 11	A Biography of Earth
Chapter 12	Riches in Rock: Energy and Mineral Resources
Chapter 13	Unsafe Ground: Landslides and other Mass Movements
Chapter 14	Streams and floods: The Geology of Streams and Floods
Chapter 15	Restless realm: Oceans and Coasts
Chapter 16	A Hidden Reserve: Groundwater
Chapter 17	Dry Regions: The Geology of Deserts
Chapter 18	Amazing Ice: Glaciers and Ice Ages
Chapter 19	Global Change in Earth System